

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

MEMO TO: Timothy Dwyer, Technical Director
FROM: Matthew Duncan and Rory Rauch, Pantex Site Representatives
SUBJECT: Pantex Plant Report for Week Ending May 13, 2011

Failed In-Service Inspection (ISI): Last week, maintenance technicians were performing the annual ISI for the static dissipative flooring in a nuclear explosive bay (there was no material in the facility at the time) when they obtained an out-of-tolerance reading on 4 of the 15 measurement locations on the floor. The technicians measured a resistance of approximately 60 k Ω at several points on the floor. The ISI requires the resistance of the floor to measure between 100 k Ω and 100M Ω . Discussions with the responsible system engineer revealed that the lower end of the ISI acceptance range was originally introduced as quality-driven acceptance criterion during installation of the floor. Despite the fact that the lower end of the resistance range had no bearing on the ability of the floor to perform its credited safety function, authorization basis personnel incorporated it into the documented safety analysis (DSA). Before resuming operations in the affected facility, B&W plans to remove the lower end of the resistance range from the DSA, modify the ISI procedure accordingly, and retest the floor.

Isolation Stand Nuclear Explosive Safety Change Evaluation (NCE): This week, PXSO approved the final report for the NCE of a new design of the work stand used for manifold operations. The old design of the work stand contained a lightning isolation feature at the base of the stand that could be compromised during a flood event (such as the one that occurred last July). The design of the new “isolation” stand requires the columns to be manufactured with a fiber-reinforced polymer covered in a commercially available rubber insulator. This modification relocates the lightning isolation feature to a height that cannot be compromised by the design basis flood event.

The NCE group identified one pre-start finding comprising 12 separate issues. In general, the finding documents NCE group’s position that analysis, testing, and controls related to mechanical and electrical failure modes of the stand—particularly with respect to the mechanical properties of the fiber-reinforced polymer—may not adequately prevent an incident of NES concern. PXSO requested that B&W address all 12 issues. The NCE group also identified one post-start finding, which documented the NCE group’s concern that B&W had not performed a compatibility study for the substance used to clean the insulating material on the stand. Without this study, B&W could not demonstrate that the cleaning material would not degrade the functionality of the insulating material.

Conduct of Operations: Last week, after receiving a shipment of radioisotopic thermoelectric generators (RTGs) from Pantex, Los Alamos National Laboratory (LANL) personnel observed that the serial number on the packaging label of one RTG did not match the serial number of the component. B&W personnel have reconstructed the timeline of how this particular RTG was packaged, transported, and staged after it arrived at Pantex and found several breakdowns in the formality of operations for these activities. The discrepancy was initially introduced in early 2008 when technicians incorrectly swapped labels while packaging RTGs upon removal from a unit. More recently, technicians failed to observe the serial number discrepancy while the RTG was being repackaged for shipment to LANL. In the fall of 2008 (after this RTG was originally packaged but before it was repackaged for shipment to LANL), B&W management took measures to enhance the reliability of material move and packaging operations. B&W management has concluded that these corrective actions would have been effective had the technicians that repackaged the RTG for shipment followed their procedure.